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Title of the Invention: THIN OPTICAL LAMINATE AND METHOD FOR  
MANUFACTURING THE SAME

[Claim 1]

15 A thin optical laminate, wherein a polarizing film with a thickness of 10  $\mu\text{m}$  or less which contains a polyvinyl alcohol-based resin as a main component and a film or a sheet that has an optical function are laminated.

20 [0021] As the retardation film, coating retardation films, which include:  
films that are aligned by stretching, by a known method such as a tenter stretching method and a roller stretching, films composed of a polycarbonate-based resin, a polyvinyl alcohol-based resin, a polysulfone-based resin, a polyethersulfone-based resin, a polyarylate-based resin, a polyethylene terephthalate-based resin, a cyclo-polyolefin-based resin, a cellulose-based resin, a liquid crystal polymer, a mixture of a resin and a liquid crystal material and the like; a film that is subjected to necessary alignment by forming a coating layer containing a liquid crystal material on a base resin film; a film obtained by forming a coating layer containing an inorganic layer compound on a base resin film; and the like.

25 30 A material, optical characteristics and a film thickness of the retardation film are selected appropriately as necessary. The laminate obtained by laminating such a retardation film to the polarizing film can be used as a  $1/2\lambda$  plate, a  $1/4\lambda$  plate, an elliptically polarizing plate, a viewing angle improving film of a liquid crystal display and the like, for example.

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[0033] Example of the adhesive include: a polyvinyl alcohol-based adhesive; a polyurethane-based adhesive; an aromatic polyether-based adhesive; an aliphatic polyester-based adhesive; an aromatic polyester-based adhesive; an epoxy resin-based adhesive; a nitrile rubber-based adhesive; an acrylic adhesive; and the like. They are used in forms of a solvent type, a non-solvent type, a one-part type, a two-part type, an emulsion type and the like. When laminating: a polarizing film with a thickness of 10  $\mu\text{m}$  or less which contains a polyvinyl alcohol-based resin as a main component; and a film or a sheet that has an optical function, any one surface or both surfaces thereof may be subjected to the surface treatment, and further, the adhesive surface can also be subjected to the surface treatment. Example of the method of the surface treatment include a corona treatment, a frame treatment, a plasma treatment, a primer treatment and the like.

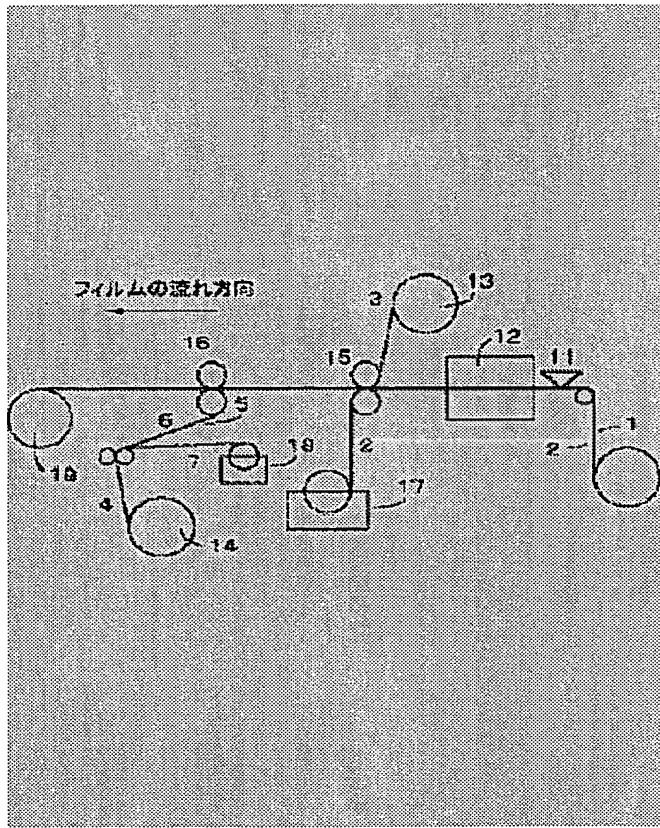
## THIN OPTICAL LAMINATE AND ITS MANUFACTURING METHOD

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## Abstract of JP2001350021

**PROBLEM TO BE SOLVED:** To provide an optical laminate having a polarizing film layer, being thin and moreover having little deformation such as curling due to variation in temperature and humidity, and to provide a method for manufacturing the same which is different from the conventional one. **SOLUTION:** The polarizing film, composed of a polyvinyl alcohol resin as a main component with  $<=10 \mu\text{m}$  thickness and the thin optical laminated body, comprising laminated optical functional films or sheets are provided. Also the method for manufacturing the optical laminate via a step to apply the polyvinyl alcohol resin to a base material resin film, a step to uniaxially stretch the obtained laminated film, so that the thickness of the polyvinyl alcohol resin layer becomes  $<=10 \times \mu\text{m}$ , a step to stick the optically functional film or the sheet 3 to the side of the polyvinyl alcohol resin layer 1, having a thickness of  $<=10 \mu\text{m}$  and a step for releasing and removing the base material resin film 2 after the optically functional film or the sheet is stuck, is provided.



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